

Invertebrata

Protozoa:

1. According to two-kingdom classification, protozoa are the first phylum of invertebrate animals but according to five kingdom classification it is placed in a separate kingdom, "protista" in which all other eukaryotic unicellular organisms are also placed.
2. Body of all protozoans consists of one cell and is therefore called unicellular.
3. They are so small in size that they cannot be seen with naked eye. They can be seen with the help of a microscope.
4. They are unicellular but they intake food, respire, reproduce.
5. Protozoans mostly live in damp, watery places. Their habitat is mostly moist soil, decaying matter of animals and plants. Most of them live singly but some form colonies. In a colony, unicellular organisms become partially interdependent and limit themselves to perform specific functions in a group. If separated from group they still can perform all life activities and can live independently.
6. Some protozoans are parasites and causes different diseases e.g. a type of Amoeba causes dysentery, plasmodium causes malaria.
7. Protozoans are also useful for man because they feed and destroy bacteria which are harmful for human health, for example Amoeba can feed on bacteria.

Paramecium:

It is unicellular animal which is found in pools and ponds. It is slipper shaped its body is covered with cilia. Cilia are small hair like out structures arising from protoplasm. Their lashing movement in water acts as oars and help in swimming (locomotion) of the animal. Paramecium feed on algae, Bacteria and other small protozoans, through an oral groove provided with cilia. Cilia push food inside the protoplasm through a canal called gullet making a food vacuole in the protoplasm. There are two contractile vacuoles, one at each end of the body for discharging surplus water there are two nuclei one large, mega nucleus which controls almost all functions of cell other small, micro or reproductive nucleus which controls reproduction. Many protozoa like Amoeba and Paramecium are unicellular but they respond to the intensity of light like all other multicellular organisms. They can detect high intensity of light and move towards the area having low intensity of light.

Phylum Porifera:

1. This phylum is called porifera because animals belonging to this phylum have numerous small pores on their bodies.
2. They are also called sponges.
3. They are multicellular but they have no organs or true tissues.
4. Every cell performs its all function.
5. Sponges are aquatic animals. Most of them are found in sea water but some live in fresh water.
6. Sponges have different colours.
7. Green colour of sponge is due to algae that live in their body. Algae produce oxygen during photosynthesis which is used by sponges and the sponges release carbondioxide, which is used by algae for photosynthesis. This association in which both the organisms benefit from each other is called mutualism.

Phylum Cnidaria:

1. Animals belonging to this phylum have a special cavity in their body which is called coelenteron and due to this reason they are called coelenterates.
2. They are diploblastic animals as their bodies have two layers of cells. Outer layer is called ectoderm and inner layer is called endoderm. Between these layers a jelly like substance the mesoglea is present.
3. Coelenterates are aquatic animals. They are mostly marine but few live in fresh water.
4. Most of the animals of this phylum can move freely but a few remain attached to stones or rocks throughout their life.
5. Hydra, Jellyfish and Sea anemone are common examples of this phylum.

Phylum Platyhelminthes:

They are triploblastic animals because their body is made of three layers, an outer ectoderm, a middle mesoderm and an inner endoderm layer. They are also called flat worms because their

body is thin, flattened and tape like. Some animals are free living but most are parasite. Parasites live in liver, stomach and intestine of other animals. They attach themselves to the walls of intestine of their host by sucker and suck blood and food. Tape worm sucks food from intestine and sometimes grows up to 40 feet in length. Liver fluke, tape worm and planaria are common examples of this phylum.

Phylum Mollusca:

1. This phylum is one of the largest phyla of animal kingdom. It has about fifty thousand species.
2. Mollusca are a latin word which means "soft". Their body is soft so in most of the animals and external shell is present for support and protection.
3. Some animals have internal shell and some lack shell. They are also known as shell fish.
4. They are found in aquatic and moist habitat.
5. Most of Mollusca are used as human food.
6. Buttons are made from their shell.
7. The pearls are produced by these animals.
8. Their body is quite complicated.
9. They have a muscular foot for locomotion and gills for respiration.
10. Snails, Fresh water mussel, Cuttle fish, Octopus and Oyster are common examples of this phylum.

Phylum Arthropoda:

1. The bodies of these animals are also segmented but these segments are external.
2. Their bodies are covered with the hard shell composed of chitin, forming an exoskeleton.
3. They have jointed legs on their body and therefore they are called arthropoda (arthro means jointed and poda means foot)
4. These animals are found in all habitats, in air, water and on land.

5. Common examples are Prawn, Crab, Spider, Scorpion, Centipede, Millipede and Insects.

Phylum Echinodermata:

1. The animals of this phylum are exclusively marine.
2. They are called echinoderms because their bodies are covered with spines or spicules.
3. All animals have internal skeleton consisting of dermal caleareous ossicles.
4. They have a water vascular system and dermal gills.
5. These animals are considered to be closest to the chordates from evolutionary point of view, Sea star (known as star fish). Brittle star, Sea urchin and Sea cucumber are examples of this phylum.

Phylum Annelida:

1. Animals in this group have elongated segmental body.
2. Annelids occur in water as well as on land.
3. They have well developed systems in their bodies.
4. They have close type circulatory system.

Phylum Nematode:

1. Nematodes or round worms have long smooth cylindrical body which is pointed at both the ends.
2. The body is un-segmented.
3. Nematodes have a complete and one way digested tube.
4. They are free-living as well as parasites of animals, man and even plants.